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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/084,526

02/26/2002

Nan Tsung Huang

7790

25859

7590

12/02/2003

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EXAMINER

DONG, DALEI

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/084,526

Applicant(s)

HUANG, NAN TSUNG

Examiner

Dalei Dong

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 is/are allowed.
- 6) ☒ Claim(s) 11-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☒ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 10/084,526.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The abstract of the disclosure is objected to because the abstract contains the word "comprises" and it should be changed to "includes". Correction is required. See MPEP § 608.01(b).

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Claim Objections***

3. Claim 12 is objected to because of the following informalities: the dependency of claim 12 is improper; claim 12 cannot be dependent of itself. Appropriate correction is required.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d

1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 11-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of U.S. Patent No. 6,483,711 to Huang in view of U.S. Patent No. 5,117,476 to Yingst. Huang claims the present claimed invention except for at least one shielding shell fixed on the print circuit board. Yingst teaches in Figures 2, 4 and 5, two metallic shielding boxes 126 and 130 on top of the printed circuit board. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the metallic shielding boxes of Yingst for the printed circuit board of Huang in order to provide an electronic package wherein optical and electronic parts are fitted together in a package providing shielding, grounding, thermal management, and mechanical protection of such parts.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-17 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,540,412 to Yonemura in view of U.S. Patent No. 5,117,476 to Yingst.

Regarding to claims 11-17 and 19-20, Yonemura discloses in Figure 1 and 2, "the optical transceiver 1 according to this embodiment includes a transmitter optical sub-module 2, a receiver optical sub-module 4 and a housing 6. The transmitter optical sub-module 2 transmits an optical signal. The receiver optical sub-module 4 receives an optical signal. These sub-modules are attached to the housing 6 (comprising a housing main body 60, a receptacle part 61 and a cover 70)" (column 6, lines 13-20).

Yonemura also discloses in Figures 1 and 2, "the transmitter optical sub-module 2 has a transmitter optical sub assembly 25 and a transmitter circuit substrate 27. The transmitter optical sub assembly 25 is composed of a metal sleeve 22 in the shape of a cylinder (corresponding to "a transmitter sleeve" according to the invention), a metal lens holder 21 in a cylindrical shape integrated with the sleeve 22, and a metal stem 23 in the shape of a disc. The metal sleeve and metal lens holder formed of resin with metal coating or metal plating have the same effect as the metal sleeve and metal lens holder only made of metal. The transmitter optical sub assembly 25 and the transmitter circuit substrate 27 are electrically connected via a plurality of (three in this example) external lead pins 24 sticking out from the metal stem 23 of the transmitter optical sub assembly 25. The sleeve 22 has an inner diameter to allow a 1.25-mm-diameter ferrule to be inserted" (column 6, lines 21-35).

Yonemura further discloses in Figures 1 and 2, “the receiver optical sub-module 4 has a receiver optical sub assembly 45 and a receiver circuit substrate 47. The receiver optical sub assembly 45 is composed of a metal sleeve 42 in the shape of a cylinder, a metal lens holder 41 in a cylindrical shape connected to the sleeve 42, and a metal stem 43 in the shape of a disc. The metal sleeve and metal lens holder formed of resin with metal coating or metal plating have the same effect as the metal sleeve and metal lens holder only made of metal. The receiver optical sub assembly 45 and the receiver circuit substrate 47 are electrically connected via a plurality of (five in this example) external lead pins 48 sticking out from the metal stem 43 of the receiver optical sub assembly 45. The sleeve 42 has an inner diameter equivalent to that of the sleeve 22 provided in the transmitter optical sub assembly 25” (column 6, lines 36-50).

However, Yonemura does not disclose at least one shielding shell fixed to the printed circuit board and shielding at least one of the receiving circuit and transmitting circuit. Yingst teaches in Figures 2, “a sub-assembly 69 which can be seen is free-standing and is made into a functional device for the purpose of testing manufacture, inventory, and the like. The sub-assembly 69 includes a platform shown as 94 in FIG. 3, a spacer shown as 110 in FIG. 5, and an integrated circuit board or ceramic substrate shown as 112 in the several FIGS. 2-5. A plurality of posts 122 interconnect the circuit substrate 112 to further circuits in board 24 when plugged therein. The sub-assembly 69 further includes a pair of ports 70 and 71 extending through a flange 96 formed from the platform 94 and optionally, metallic shielding boxes 126 and 130 positioned as shown in FIGS. 2, 4 and 5” (column 4, lines 1-13).

Yingst also teaches in Figures 4 and 5, “the sub-assembly 69 includes a pair of ports 70 and 71 which are active device mounts which contain optical transmitter and receiver active device 190, 191 fixed therewithin as indicated in FIG. 5 with respect to port 70. Each of the ports 70, 71 includes a beveled front end 72 adapted to guide in mating relationship a connector half 12 which is extended within the bore into a mating engagement of the surface of the optical active device 190, 191 contained within 70, 71. Each port 70, 71 includes a front flange 76, generally rectangular in shape, positioned to serve as a stop relative to axial insertion of a port 70, 71 through the apertures 98 in the flange 96 of the platform (see FIG. 3). Each of the ports 70, 71 includes a D-shaped section shown as 77 fitted within the wall or aperture 98 of 96 to orient the port and fix it against rotation relative to the flange 96, the platform 94, and the circuit substrate 112. Adjacent this flange is a groove shown as 78 having fitted therein a C-clip which locks the port to the flange. The clip is shown as 79 and thereadjacent is further flange 80 and a groove 82 in the port material adapted to receive the wall material of a shielding box, a pair of boxes 126 and 130 covering circuit areas 114 and 116 as shown in FIG. 4. Leads, shown as 86, extend from the active device 190, 191 within a port 70, 71 to be joined as by soldering to pads the surface of the substrate 112. These leads interconnect the transmitter and receiver active devices 190, 191 within the two ports 170, 171. With respect to the sub-assembly 69 shown in FIG. 4, the upper port 70 is connected electrically to a receiver component mounted on the surface of 112. The transmitter elements of the transceiver are similarly interconnected to the active device 190 within port 71” (column 4, lines 14-47).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the metallic shielding box fixed on top of the printed circuit board of Yingst for the optical module of Yonemura in order to provide an electronic package wherein optical and electronic parts are fitted together in a package providing shielding, grounding, thermal management, and mechanical protection of such parts.

7. Claims 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,540,412 to Yonemura in view of U.S. Patent No. 5,117,476 to Yingst in further view of U.S. Patent No. 6,558,191 to Bright.

Regarding to claim 18, Yonemura in view of Yingst teaches the claimed the claimed invention except for shielding shell has at least one ventilating hole defined therein.

Bright teaches in Figure 1, “the receptacle assembly includes an intermediate circuit board 10, a pair of first transceiver receptacles 12a mounted on one side of the intermediate circuit board, and a pair of second transceiver receptacles 12b mounted on an opposite side of the intermediate circuit board. Each of the first and second transceiver receptacles 12a, 12b comprises a host connector 14 and a shielding cage 16. The host connector 14 is mounted on and electrically connected to the intermediate circuit board 10. The host connector 14 is preferably a card edge connector having contacts extending into a slot that is configured to receive a plug-in card edge located at a back end 19 of a transceiver module 20 (see FIG. 2). Such a host connector 14 is sold by



Tyco Electronics Corporation of Harrisburg, Pa. as part number 1367073-1” (column 2, lines 22-35).

Bright also teaches in Figures 1, “the shielding cage 16 is made from electrically conductive material and includes a bottom cage 22 and a top cage 26. The bottom cage 22 has mounting posts 23 that are electrically connected with ground paths on the intermediate circuit board 10, and EMI suppression pins 52 that extend into holes in the intermediate circuit board but are not electrically connected to the board. The bottom cage 22 has a bottom wall 24 adjacent to the intermediate circuit board. An opening 46 at the rear of the bottom wall 24 is sized to permit the host connector 14 to extend through the bottom wall so that the host connector resides between side walls 25 of the bottom cage 22. The top cage 26 is mounted on the bottom cage 22 and is secured thereto by lanced tabs 27 of the bottom cage that are snap-fitted into apertures 28 of the top cage. The top cage 26 has EMI suppression pins 29 that extend into holes in the intermediate circuit board 10 but are not electrically connected to the board” (column 2, lines 36-53).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the metallic shielding box fixed on top of the printed circuit board of Yingst with ventilating holes of Bright for the optical module of Yonemura in order to provide an electronic package wherein optical and electronic parts are fitted together in a package providing shielding, grounding, thermal management, and mechanical protection of such parts.

*Allowable Subject Matter*

8. Claims 1-10 are allowed.
9. The following is a statement of reasons for the indication of allowable subject matter:  
The prior art of record fails to show or suggest a small form factor pluggable optoelectronic transceiver module comprising an optoelectronic subassembly for receiving and sending optical signals; a receptacle receiving the optoelectronic subassembly and including a top surface having at least one protuberance and a bottom surface having at least two grooves; a printed circuit board electrically contacting with the optoelectronic subassembly; a chassis for fixing and holding the printed circuit board, a pair of depressions being defined in a rear end of the chassis; a first housing including a top wall, a pair of forward side walls, a pair of rearward side walls, and at least one locking tab, at least one opening being defined in the top wall and engagingly receiving the at least one protuberance of the receptacle, a bottom of each forward side wall having at least one flap engaging in the grooves of the receptacle, a tab being formed at a rear end of each rearward side wall and engaging in a corresponding depression of the chassis; a second housing fixed to the first housing by the at least one locking tab to encapsulate the printed circuit board and the chassis; and a shielding shell attached to the printed circuit board to prevent cross talk.

The prior art for example Yonemura teaches an optoelectronic subassembly for receiving and sending optical signals; a receptacle receiving the optoelectronic subassembly and including a top surface having at least one protuberance and a bottom

surface having at least two grooves; a printed circuit board electrically contacting with the optoelectronic subassembly; a chassis for fixing and holding the printed circuit board, a pair of depressions being defined in a rear end of the chassis; and a second housing fixed to the first housing by the at least one locking tab to encapsulate the printed circuit board and the chassis; and a shielding shell attached to the printed circuit board to prevent cross talk. However, prior art of record fails to teach a first housing including a top wall, a pair of forward side walls, a pair of rearward side walls, and at least one locking tab, at least one opening being defined in the top wall and engagingly receiving the at least one protuberance of the receptacle, a bottom of each forward side wall having at least one flap engaging in the grooves of the receptacle, a tab being formed at a rear end of each rearward side wall and engaging in a corresponding depression of the chassis.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art are cited to further show the state of the art of composition of a optoelectronic transceiver module.

U.S. Patent No. 6,178,096 to Flickinger.

U.S. Patent No. 6,335,869 to Branch.

U.S. Patent No. 6,358,066 to Gilliland.

U.S. Patent No. 6,461,058 to Birch.

Art Unit: 2875

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (703)308-2870. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703)305-4939. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

D.D.  
November 17, 2003



Sandra O'Shea  
Supervisory Patent Examiner  
Technology Center 2800